

BIOGRAPHICAL SKETCH

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NAME Antonello Bonci, MD		POSITION TITLE Scientific Director	
eRA COMMONS USER NAME (credential, e.g., agency login) antonello.bonci		National Institute on Drug Abuse National Institutes of Health	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Vollum Institute for Advanced Biomedical Research, Portland, OR, USA	Postdoctoral Fellowship	1994-1996	Biomedical Research
School of Neurology, University of Rome "Tor Vergata", Rome, Italy	Resident	1991-1995	Neurology
Catholic University of Sacred Heart, School of Medicine, Rome, Italy	M.D.	1985-1991	Medicine

A. Personal Statement

I am known as one of the world's leading researchers in neuropsychopharmacology. I joined the National Institutes of Health (NIH) in 2010 as Scientific Director of the National Institute on Drug Abuse (NIDA). I was professor in residence in the Department of Neurology at the University of California, San Francisco (UCSF) and held the Howard J. Weinberg Endowed Chair in Addiction Research; as well as Associate Director for Extramural Affairs at the Ernest Gallo Clinic and Research Center. I am also known for the elegance and multidisciplinary breadth of my studies on the long-term effects of drug exposure on the brain. My laboratory was the first to demonstrate that drugs of abuse such as cocaine produce long-lasting modifications on the strength of the connections between neurons. This form of cellular memory is called long-term potentiation (LTP.) This finding cast a new light on the phenomenon of drug addiction, which could now be seen as a process of maladaptive learning and memory at the cellular level. In turn, this information helped explain why drug taking can often become such a long-lasting phenomenon, with relapse occurring even several years after the last encounter with a drug.

B. Positions and Honors

1996-1998	Medical Executive, first level, IRCCS Hospital S. Lucia, Department of Neurorehabilitation and Dept. of Pharmacology, Rome, Italy.
1998-2010	Professor in Residence, Dept. of Neurology, University of California, San Francisco. Howard J. Weinberger Endowed Chair in Addiction Research at UCSF Associate Director- Extramural affairs - Ernest Gallo Clinic and Research Center
1998-1999	Visiting Assistant Professor, Dept. of Psychiatry, UCSF Sponsor: Prof. Robert C. Malenka
1999-1999	Visiting Assistant Professor, Dept. of Neurology, UCSF Principal Investigator, Ernest Gallo Clinic and Research Center

1999-2004	Assistant Professor in Residence, Dept. of Neurology, UCSF Principal Investigator, Ernest Gallo Clinic and Research Center
2004-2007	Associate Professor in Residence, Dept. of Neurology, UCSF Principal Investigator, Ernest Gallo Clinic and Research Center
2006-2010	Howard J. Weinberger Endowed Chair in Addiction Research at UCSF
2007-2010	Professor in Residence, Dept. of Neurology, UCSF
2011-2012	Adjunct Professor, Dept. of Neuroscience, Johns Hopkins University School of Medicine

C. Selected Peer-reviewed Publications (Selected from

1. M. Ungless, J. L. Whistler, R. C. Malenka and **A. Bonci**. Single cocaine exposure *in vivo* induces long-term potentiation in dopamine neurons. *Nature*. 2001; 31;411(6837):583-7.
2. M. Ungless, V. Singh, T. Crowder, R. Yaka, D. Ron and **A. Bonci**. Corticotropin-releasing factor (CRF) requires CRF-binding protein to potentiate NMDA receptors via CRF receptor 2. *Neuron*. 2003; 39(3): 401-7. (highlighted as a Preview in *Neuron*).
3. S. E. Bartlett, J. Enquist, F. W. Hopf, J. H. Lee, F. Gladher, V. Kharazia, W. S. Mailliard, M. Waldhoer, R. Armstrong, **A. Bonci** and J. L. Whistler. Functional Recovery of Mesolimbic Dopamine Receptor Responses by Inhibition of D2 Receptor Degradation. *PNAS*. 2005; 9; 102(32): 11521-6.
4. S. Borgland, S. Taha, H. L. Fields and **A. Bonci**. Orexin A is critical for plasticity and behavioral sensitization to cocaine. *Neuron*, 2006; 49(4): 589-601. (highlighted as a Preview in *Neuron*).
5. M. Martin, B. T. Chen, F. H. Hopf and **A. Bonci**. Cocaine self-administration selectively abolishes LTD in the Core but not in the Shell of the nucleus accumbens. *Nature Neuroscience*. 2006; 9(7): 868-9.
6. K. Tye, G. Stuber, **A. Bonci**, and P. H. Janak. Amygdala activity and synaptic strength predict reward learning performance. *Nature*. 2008; 26; 453(7199): 1253-7.
7. B.T. Chen, M. Martin, M. S. Bowers, F. W. Hopf and **A. Bonci**. Persistent LTP in the VTA after cocaine self-administration. *Neuron*. 2008; 59(2): 288-97.
8. L. S. Zweifel, E. Argilli, **A. Bonci**, and R. D. Palmiter. Role of NMDAR-Dependent Plasticity in Dopamine Neurons for Addictive Behaviors. *Neuron*. 2008; 14; 59(3): 486-96.
9. E. Argilli, D. R. Sibley, R. C. Malenka, P.M. England, and **A. Bonci**. Mechanism and time-course of cocaine-induced LTP in the VTA. *J. Neuroscience*. 2008; 10; 28(37): 9092-100.
10. G.D. Stuber, M. Klanker, B. de Ridder, M. S. Bowers, R. N. Joosten, M. G. Feenstra and **A. Bonci**. Reward predictive cues enhance excitatory synaptic strength onto midbrain dopamine neurons. *Science*. 2008; 19; 321(5896): 1690-2.
11. H.C. Tsai, F. Zhang, A. Adamantidis, G.D. Stuber, **A. Bonci**, L. de Lecea and K. Deisseroth. Phasic firing in dopaminergic neurons is sufficient for behavioral conditioning. *Science*. 2009; 324(5930): 1080-4.
12. W. Hopf, M. S. Bowers, B. T. Chen, M. Martin, A. Guillory, M. Mohamedi, S.J. Chang, S. Cho, and **A. Bonci**. Reduced nucleus accumbens SK channel activity enhances motivation for alcohol during abstinence. *Neuron*. 2010; 65(5):682-94.
13. K. M. Tye, L. Tye, J. J. Cone, P. H. Janak and **A. Bonci**. Methylphenidate (Ritalin®) facilitates learning-induced amygdala plasticity. *Nature Neuroscience*. 2010; 13(4):475-81.
14. M. S. Bowers, B. T. Chen, and **A. Bonci**. AMPA receptor synaptic plasticity induced by psychostimulants: the past, present and therapeutic future. *Neuron*. 2010; 67(1): 11-24.

15. G. D. Stuber, T. S. Hnasko, J. P. Britt, R. H. Edwards, and **A. Bonci**. Dopaminergic terminals in the nucleus accumbens but not the dorsal striatum co-release glutamate. *J. Neuroscience*. 2010; 30 (24): 8229-33.
16. S. J. Kotowski, F. W. Hopf, T. Seif, **A. Bonci** and M. von Zastrow. Endocytosis promotes rapid dopaminergic signaling. *Neuron*. 2011;71(2):278-90
17. G.D Stuber, D.R. Sparta, A.M. Stamatakis, W.A. van Leeuwen, J.E. Hardjoprajitno, S. Cho, K.M. Tye, K.A. Kempadoo, F. Zhang, K. Keisseroth, **A. Bonci**. Excitatory transmission from the amygdala to nucleus accumbens facilitates reward seeking. *Nature*. 2011; doi:10.1038/nature10194
18. L.S. Zweifel, J.P. Fadok, E. Argilli, M.G. Garelick, G.L. Hones, T.M. Dickerson, J.M. Allen, S.J. Mizumori, **A. Bonci**, R.D. Palmiter. Activation of dopamine neurons is critical for aversive conditioning and prevention of generalized anxiety. *Nat Neurosci*. 2011;14(5): 620-6.

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07/01/09 - 06/30/14

NIH/NIDA

CRF Modulation of NMDA Currents and Behavior in the VTA

The major goal of this project is to elucidate the role of CRFR1 and CRFR2 in promoting stress-enhanced relapse to cocaine seeking.